EXHIBIT 1
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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

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17 | GOOGLE LLC,

Case No. 3:20-cv-06754-WHA
Related to Case No. 3:21-cv-07559-WHA

18 | Plaintiff and Counter-defendant,

19 | v.

**REBUTTAL EXPERT REPORT OF
DR. KEVIN C. ALMEROTH FOR
"PATENT SHOWDOWN"**

20 | SONOS, INC.,

21 | Defendant and Counter-claimant.

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with one or more other "zone players" so that the grouped "zone players" become configured for synchronous playback. *Id.* at 5:16-20, 5:57-6:7, 6:43-48, 7:35-41, 7:58-9:30, 10:4-11:20. In this respect, each "zone player" will be operating in one of two states at any given time: (i) a first state in which the "zone player" is not actively grouped with any other "zone player" but rather is configured to play back audio individually (*i.e.*, a non-grouped or standalone mode), whether or not the "zone player" is engaging in active playback, or (ii) a second state in which the "zone player" is actively grouped with one or more other "zone players" such that it is configured for synchronous playback as part of that group (*i.e.*, a grouped mode), whether or not the group is engaging in active playback. *Id*.

104.   The '885 Patent explains that one process for grouping "zone players" together for synchronous playback in a networked multi-zone audio system involves a user selecting the particular "zone players" to include in the group in an ad-hoc manner, one-by-one, when the user wishes to activate the group for synchronous playback. *Id.* at 8:30-45. I understand that this was the grouping process being practiced by the commercial embodiment of Sonos's networked multi-zone audio system at the time of the invention of the '885 Patent in 2005. However, the '885 Patent notes that this process "may sometimes be quite time consuming," because each time the user wishes to activate a different group for synchronous playback, the user has to repeat the ad-hoc process of selecting each of the "zone players" to include in the group even if it is a grouping of "zone players" that has previously been formed and activated by the user on many other occasions in the past. *Id*.

105.   In view of these drawbacks with ad-hoc grouping, the '885 Patent describes a new process for grouping "zone players" together for synchronous playback in a networked multi-zone audio system using a "zone scene," which comprises a "predefined" group of "zone players" that is first pre-configured by a user and is then made available for future use so that a user can later activate the group for synchronous playback. *Id.* at 8:45-9:30, 10:4-11:20, FIGs. 5A-B, 6; *see also* '407 Provisional at App'x A. This new grouping process enables a user to activate a group of "zone players" for synchronous playback in a more seamless manner, because instead of having to select each "zone player" to include in the group in a "time consuming" ad-hoc manner, the user

1   can simply select a saved "zone scene" comprising a predefined version of the group.

2   106.   As disclosed, grouping "zone players" using a "zone scene" involves two phases.

3   During a first "setup" phase, the particular "zone players" to be included in the predefined group

4   are added to the "zone scene" at a controller device and the "zone scene" is pre-saved for future

5   use – but the predefined group of "zone players" is not activated for synchronous playback at this

6   time. *See, e.g.*, '885 Patent at 8:45-51, 10:4-19, 10:36-52, 11:12-19; '407 Provisional at App'x A,

7   1-2, 9-16.   Rather, the predefined group of "zone players" initially exists in an inactive state.

8   Thereafter, during a second phase, the pre-saved "zone scene" can be "invoked" at the request of

9   a user, which is what causes the predefined group of "zone players" to become activated for

10   synchronous playback. *See, e.g.*, '885 Patent at 9:16-20, 10:53-63, 11:12-19, '407 Provisional at

11   App'x A, 1-8.

12   107.   The '885 Patent further discloses that a user can set up multiple different "zones

13   scenes" comprising multiple different predefined groups of "zone players," including predefined

14   groups with overlapping members, which then provides the user with the flexibility to later activate

15   any one of these "zone scenes" at a desired time without having to re-construct the predefined

16   group in an ad-hoc manner. *See, e.g.*, '885 Patent at 2:56-59 (disclosing that "*various scenes* may

17   be saved in *any* of the members in a group,"), 8:52-9:19 (disclosing four different examples of

18   "zone scenes" for a given system that have overlapping members), 10:4-6 (disclosing that when

19   setting up a new "zone scene," a user is presented with a list of "the available zones in a

20   household"), 10:12-19 (disclosing that when a user is selecting which "zone players to add during

21   setup of each "zone scene," the user is presented with "ALL the zones in the system, including the

22   zones that are already grouped"), 10:36-42 (disclosing an example where a user is presented with

23   an "interface to select" from the "players in a household"), 10:51-52 (disclosing that after one

24   "zone scene" has been set up, a user may "go back . . . to configure another [zone] scene if

25   desired"), FIGs. 6, 8; *see also* '407 Provisional at 12-13 (disclosing a "Morning" "zone scene"

26   comprising a predefined grouping of the "Bedroom, Den and Dining Room" players and "a simple

27   form of a zone scene" comprising a predefined grouping of "all zones" in the system); *id*. at App'x

28   A, 2 (disclosing one "zone scene" that includes "Living Room + Kitchen + *Den*" players and

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141.   *Fourth*, I disagree with Google's argument that a "zone scene" must include these other attributes because they are what "differentiates 'zone scenes' from the admittedly conventional and well-known speaker groups." D.I. 249 at 5. I have seen nothing in the intrinsic evidence suggesting that either the inventors or the patent examiner of the '885 Patent believed that a "zone scene" was even required to have a "common theme" to differentiate from prior art – let alone was required to include the "attributes" identified by Google in order to differentiate from prior art. To the contrary, the intrinsic evidence shows that the claimed "zone scene" differentiates from "conventional and well-known speaker groups" based on the fact that it comprises a previously-saved, "predefined grouping" of "zone players" that are "to be configured for synchronous playback of media" at some future time "when the [zone scene] is invoked," which provides a new way to group "zone players" in a more seamless manner by (i) allowing a "zone player" to be added to multiple different predefined groups that initially exist in an inactivate state and then (ii) making those different predefined groups available so that a user can later choose to any such group for synchronous playback, at which point the "zone players" in the predefined group become "configured to coordinate" with one another "over a data network" in order to "output media in synchrony." Additionally, the claimed "zone players" are a new type of audio players equipped with data networking and digital processing capabilities that make them structurally and functionally very different from "conventional" audio players, which lacked these advanced capabilities. At a minimum, the claimed invention is differentiated from "conventional and well-known speaker groups" based on these features, which have nothing to do with whether the claimed "zone scenes" include the other optional "attributes" identified by Google.[3]

142.   For these reasons, a POSITA would not consider the "attributes" identified by Google to be a requirement of a "zone scene" under Google's proposed construction.[4] Instead, a

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[3] For similar reasons, I disagree with Google's contention that a thematic name cannot reflect a "common theme" because "simply naming a group" is not novel over prior art. D.I. 249 at 6-7. This ignores the other claim features that differentiate over prior art and attempts to construe the claims with reference to prior art rather than the intrinsic evidence, which I understand to be improper.

[4] To the extent that the Court decides to formulate its own construction of "zone scene" that differs from those proposed by Sonos and Google, then for similar reasons, I do not believe these other optional "attributes" should be included as a requirement of that construction.

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1   Scenes" concept as capable of being used in conjunction with the Sonos ZP100 system. *See, e.g.,*

2   SONOS-SVG2-00026839 - SONOS-SVG2-00026858 at 26840 ("Currently in the Sonos UI, zone

3   groups are created by manually linking zones one at a time until the desired zone grouping is

4   reached."), at 26855 ("Currently, as discussed in the introduction of this document, the current

5   Link and Drop Zones features allow the user to link and drop Zones one at a time"), and at 26858

6   ("This concept is aimed at households that have more than a few ZonePlayers"); Lambourne Dep.

7   Ex. 1097.

8   176.   The evidence further shows that, by March 2, 2005, inventor Mr. Lambourne began

9   documenting his thoughts on his "Zone Scenes" concept. *See* SONOS-SVG2-00026625 - SONOS-

10   SVG2-00026751 at 625-628. In the March 2, 2005 time frame, Mr. Lambourne referred to this

11   concept using the terms "Zone Groups" or "Macros." *Id.* After March 2, 2005, Mr. Lambourne

12   continued refining the "Zone Scene" concept, including his "Alarm Clock" concept, with the

13   support of colleagues, such as Messrs. Schulert and Millington. *See, e.g.,* SONOS-SVG2-

14   00026888; SONOS-SVG2-00026625, at 647-57, 658, 666-67, 668-69, 675-82, and 685; SONOS-

15   SVG2-00026839 - SONOS-SVG2-00026858; and Lambourne Dep. Tr. 39:22-41:17 (relating

16   Alarm Clock to Zone Scene).

17   177.   Following on this work, the evidence shows that Mr. Lambourne drafted a "Sonos

18   UI Specification" for "Zone Scenes" that was last modified on December 21, 2005. *See* SONOS-

19   SVG2-00026839 - SONOS-SVG2-00026858 at 839. The disclosure in this Sonos UI Specification

20   is nearly identical to Appendix A of the '407 Provisional that was filed on September 12, 2006.

21   **1.   Conception**

22   178.   As demonstrated in the table below, it is my opinion that Mr. Lambourne's "Sonos

23   UI Specification," SONOS-SVG2-00026839 - SONOS-SVG2-00026858, demonstrates that Mr.

24   Lambourne conceived of the subject matter of claim 1 of the '885 Patent by December 21, 2005.

25   179.   Based on my review of Sonos's response to Interrogatory No. 1, including the claim

26   chart included within this response, which is reproduced below, this chart illustrates the exemplary

27   and sufficient disclosure for the conception of claim 1 of the '885 Patent present in Mr.

28   Lambourne's "Sonos UI Specification," SONOS-SVG2-00026839 - SONOS-SVG2-00026858 as

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applied to Sonos's network-enabled audio players/zone players:

Claim 1		Conception
[1.0]-[1.4]	A first zone player comprising: a network interface that is configured to communicatively couple the first zone player to at least one data network; one or more processors; a non-transitory computer-readable medium; and program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the first zone player to perform functions comprising:	By December 21, 2005, Lambourne conceived of a first zone player comprising a network interface that is configured to communicatively couple the first zone player to at least one data network, one or more processors, a non-transitory computer-readable medium, and program instructions stored on the non-transitory computer-readable medium that, when executed by the one or more processors, cause the first zone player to perform the functions identified below. In this respect, by December 21, 2005, Lambourne began actively working towards a system comprising a networked-enabled computing device and one or more of Sonos's network-enabled audio players of the time (e.g., at least the ZP100), including a Sonos network-enabled audio player that meets the elements of claim 1 of the '885 Patent (the claimed "first zone player"). For purposes of this chart, Sonos's network-enabled audio players of the time will be referred to as "Sonos audio players." Because each Sonos audio player was a data network device (*i.e.*, a device that is configured to connect to and communicate over a medium that interconnects devices in a manner that enables them to send digital data packets to and receive digital data packets from each other) and was configured to process and output audio, each Sonos audio player comprised a "zone player," as recited in claim 1. The conception of the aforementioned system comprising a Sonos audio player that meets each element of claim 1 of the '885 Patent is evidenced by at least shared documentation and the anticipated testimony of Rob Lambourne, Nick Millington, Andrew Schulert, and/or Ron Kuper. For instance, Mr. Lambourne drafted a "Sonos UI Specification" for "Zone Scenes" that was last modified on December 21, 2005. *See* SONOS-SVG2-00026839 - SONOS-SVG2-00026858 at 839. The disclosure in this Sonos UI Specification is nearly identical to Appendix A of the '407 Provisional that was filed on September 12, 2006. As discussed herein, this Sonos UI Specification is exemplary evidence that Mr. Lambourne conceived of a "first zone player" by December 21, 2005 with the capability to perform the functions recited in claim 1.
[1.5]	while operating in a standalone mode in which the first zone player is	By December 21, 2005, Lambourne conceived of a first Sonos audio player (sometimes referred to as a "zone" or "ZonePlayer" in Sonos's internal documentation) that comprises program instructions stored on the first Sonos audio player's non-transitory computer-readable medium that, when executed by the first Sonos

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2.   Diligence between December 21, 2005 and September 12, 2006

181.   I have also been asked to evaluate whether there is evidence of reasonable diligence between the time of Mr. Lambourne's conception, by December 21, 2005, and the reduction to practice, by filing the '407 provisional application. Based on my review of the evidence, there is substantial evidence of activity supporting diligence directly related to the reduction to practice between December 21, 2005 and September 12, 2006.

182.   The evidence shows that, after December 21, 2005, Mr. Lambourne continued refining the "Zone Scene" concept, along with his "Alarm Clock" concept, with the support of his colleagues, such as Messrs. Schulert and Millington, that continued until (i) the filing of the '407 Provisional on September 12, 2006 and (ii) the public release of the "Alarm Clock" concept shortly after the filing of the provisional, which was part of Sonos's software version 2.0 release known internally at Sonos as "Elvis." The evidence also makes clear that others, including Mr. Millington, helped develop the software to implement the "Alarm Clock" feature and that Sonos conducted alpha and beta testing on the "Alarm Clock" feature before it was generally available to the public through the "Elvis" software release. The following are exemplary citations to early documents that evidence diligence toward the reduction to practice of both of the related "Alarm Clock" and "Zone Scene" concepts:

- SONOS-SVG2-00026839 – version 1 of the "Zone Scenes" Sonos UI Specification modified by Mr. Lambourne on December 21, 2005.

- SONOS-SVG2-00026811– version 3 of the "Clock and Alarm Clock" Sonos UI Specification modified by Mr. Lambourne on January 20, 2006.

- SONOS-SVG2-00026907– a chain of emails exchanged between Mr. Lambourne and his colleagues on January 20, 2006 and between February 8-9, 2006 discussing Mr. Lambourne's "Alarm Clock" specification and challenges involved with implementing the "Alarm Clock" feature.

- SONOS-SVG2-00026882– an email that Mr. Lambourne sent to Mr. Schulert on February 1, 2006 discussing Mr. Lambourne's "Elvis" work items, including "Alarm Clocks."

- SONOS-SVG2-00026882 and SONOS-SVG2-00026884 – chains of emails exchanged between Sonos employees between February 2-8, 2006 in which Sonos

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employees provided Mr. Lambourne feedback regarding his "Alarm Clock" specification.

- SONOS-SVG2-00026909 – a chain of emails exchanged between Messrs. Lambourne and Schulert between February 7-9, 2006 discussing the "Alarm Clock" concept.

- SONOS-SVG2-00026752 – "Sonos Alarm Clock corner cases" document that prepared by Mr. Lambourne on February 17, 2006.

- SONOS-SVG2-00026892 – a chain of emails exchanged between Mr. Lambourne and his colleagues between February 23-27, 2006 discussing a source code "checkin" related to the "Alarm Clock" concept and testing of that source code.

- SONOS-SVG2-00026894, SONOS-SVG2-00026896– a chain of emails that Mr. Lambourne exchanged with his colleagues between February 24-March 2, 2006 and an attachment thereto of "Controller Alarm Clock Settings" wireframes that Mr. Lambourne prepared.

- SONOS-SVG2-00026897, SONOS-SVG2-00026898 – an email that Mr. Lambourne sent to Mr. Schulert on March 1, 2006, and an attachment thereto of an "Alarm zones scenarios" document that Mr. Lambourne updated on March 1, 2006.

- SONOS-SVG2-00026625 – Mr. Lambourne's sketchbook memorializing refinements to his "Alarm Clock" and "Zone Scene" concepts:

  - SONOS-SVG2-00026625 at 695-703

  - SONOS-SVG2-00026625 at 704, 706-709 (March 2-3, 2006)

  - SONOS-SVG2-00026625 at 710-711 (March 7, 2006).

- SONOS-SVG2-00026902– a chain of emails exchanged between Messrs. Lambourne and Schulert between March 1-6, 2006 discussing corner cases for the "Alarm Clock" concept.

- SONOS-SVG2-00026921– a chain of emails between Messrs. Millington and Lambourne, as well as other of their colleagues, on March 6, 2006 discussing a model for the "Alarm Clock" and "Zone Scene" concepts and implementing the same in source code.

- SONOS-SVG2-00026922– a chain of emails between Messrs. Millington and Lambourne, as well as other of their colleagues, on March 6, 2006 discussing the "Alarm Clock" concept and implementing the same in source code.

- SONOS-SVG2-00026472 – Mr. Lambourne's sketchbook demonstrating he was continuing to refine his "Alarm Clock" concept:

  - SONOS-SVG2-00026472 at 475 (March 7, 2006)

  - SONOS-SVG2-00026472 at 485 (March 15, 2006)

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- SONOS-SVG2-00026472 at 486-490 (March 20, 2006)

- SONOS-SVG2-00026472 at 508-510 (April 16, 2006)

- SONOS-SVG2-00026472 at 517-519 (May 15, 2006)

- SONOS-SVG2-00026472 at 572

- SONOS-SVG2-00026472 at 579 (prior to August 11, 2006).

• SONOS-SVG2-00026906 – an email that Mr. Lambourne sent to his colleagues on March 7, 2006 that included a hyperlink to a version of the "Alarm Clock" Sonos UI Specification.

• SONOS-SVG2-00026924 – a chain of emails exchanged between Mr. Lambourne and his colleagues between March 8-14, 2006 in which those colleagues provided Mr. Lambourne with feedback regarding his proposals for the "Alarm Clock" concept and also discussing the "Zone Scene" concept.

• SONOS-SVG2-00026766 – version 3 of the "Clock and Alarm Clock" Sonos UI Specification that Mr. Lambourne modified on April 14, 2006.

• SONOS-SVG2-00026883 – an email sent by Mr. Lambourne to his colleagues on April 21, 2006 discussing the schedule for the "Elvis" software update, including discussion of the "Alarm Clock" concept.

• SONOS-SVG2-00026911– a chain of emails that were sent between Sonos colleagues on May 3, 2006 indicating that the "Alarm Clock" was under alpha testing.

• SONOS-SVG2-00026912– an email that Mr. Lambourne sent to his colleagues on May 8, 2006 that included a hyperlink to a spreadsheet containing feedback that he collected from the "Alarm Clock" alpha testing.

• SONOS-SVG2-00026913, SONOS-SVG2-00026914 –an email and attachment that Mr. Lambourne sent to Mr. Schulert on May 11, 2006 related to challenges faced with implementing the "Alarm Clock" concept in Sonos's architecture and possible solutions thereof.

• SONOS-SVG2-00026887– an email that Steve Holmgren sent to Mr. Lambourne and his colleagues on May 15, 2006 regarding hardware implementation details for the "Alarm Clock" concept.

• SONOS-SVG2-00026754 – a "Clock and Alarms: Changes following Alpha feedback" document that Mr. Lambourne prepared on May 15, 2006.

• SONOS-SVG2-00026915– a chain of emails exchanged between Messrs. Holmgren and Lambourne, as well as other colleagues, on May 15, 2006 discussing implementation details for the "Alarm Clock" concept.

• SONOS-SVG2-00026866– a source code "checkin" email sent by Mr. Millington to

the Sonos team on May 25, 2006 related to the "Alarm Clock" concept.

- SONOS-SVG2-00026861– an email sent by Matt Meyer sent to Mr. Lambourne and his colleagues on May 31, 2006 discussing action items for the second alpha for Elvis, including "Alarm Clock" related action items.

- SONOS-SVG2-00026923– a chain of emails sent by Mr. Millington to Messrs. Schulert and Lambourne on June 12, 2006 discussing implementation details for Sonos's distributed alarm clock execution model.

- SONOS-SVG2-00026867– a chain of emails including a source code "checkin" email by Mr. Millington to the Sonos team on June 13, 2006 related to the "Alarm Clock" concept.

- SONOS-SVG2-00026916– a chain of emails between Messrs. Schulert and Lambourne on July 6, 2006 discussing "Zone Scenes" as still being on the feature request list.

- SONOS-SVG2-00026928 – "Sonos, Inc. Build Release Notes" for the first Elvis beta release on July 18, 2006.

- SONOS-SVG2-00026931 – "Sonos, Inc. Build Release Notes" for the second Elvis beta release on July 25, 2006.

- SONOS-SVG2-00026939 – "Sonos, Inc. Build Release Notes" for the third Elvis beta release on August 3, 2006.

- SONOS-SVG2-00026868 – a chain of emails between members of the Elvis beta team that were sent between August 4-7, 2006 discussing the best testing of the Elvis software.

- SONOS-SVG2-00026810 – a spreadsheet that was updated on August 8, 2006 containing feedback that Mr. Lambourne collected from the Elvis software beta testing.

- SONOS-SVG2-00026862, SONOS-SVG2-00026863 – a chain of emails that Mr. Lambourne sent to his colleagues between August 10-11, 2006, and an attachment of a Sonos Elvis Beta feedback document that he modified on August 11, 2006.

- SONOS-SVG2-00026917, SONOS-SVG2-00026918 – an email that Mr. Lambourne sent to his colleagues on August 11, 2006, and an attachment of a Sonos Elvis Beta feedback document that he modified on August 11, 2006.

- SONOS-SVG2-00026952 – "Sonos, Inc. Build Release Notes" for the fourth Elvis beta release on August 15, 2006.

- SONOS-SVG2-00026935 – "Sonos, Inc. Build Release Notes" for the fifth Elvis beta release on August 25, 2006.

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- SONOS-SVG2-00026859 – an email that Mr. Millington sent to Mr. Lambourne and his colleagues on August 27, 2006 discussing the final quality assurance testing for the Elvis release.

- SONOS-SVG2-00026949 – "Sonos, Inc. Build Release Notes" for the sixth Elvis beta release on September 6, 2006.

- SONOS-SVG2-00026942 – "Sonos, Inc. Build Release Notes" for the seventh Elvis beta release on September 11, 2006.

- SONOS-SVG2-00026938– "Sonos, Inc. Build Release Notes" for the eighth Elvis beta release on September 11, 2006.

- SONOS-SVG2-00026945 – "Sonos, Inc. Build Release Notes" for the gold source code build for the Elvis software release on September 14, 2006.

183.   Based on my review of the evidence, there is substantial evidence of activity supporting diligence directly related to the reduction to practice between December 21, 2005 and September 12, 2006. Dr. Schonfeld has not set forth any opinion that Mr. Lambourne and those assisting him on implementing his Zone Scenes concept failed to pursue the invention with diligence.

## XI.   OVERVIEW OF THE ALLEGED PRIOR ART

A.   Sonos's 2005 System

184.   Dr. Schonfeld's "Sonos System" reference refers to the set of hardware and software products released by Sonos beginning in January in 2005. Later in this section, I discuss the specific evidence Dr. Schonfeld has relied on to form his opinion regarding how the Sonos System operated back in 2005, including his reference to Sonos User Guides, Sonos's marketing material, including its webpages, and Sonos's source code for the Sonos System. But for now, I will provide a brief overview of the relevant functionality of the Sonos System based on my review of the evidence and my conversation with Nick Millington.

185.   In January 2005, Sonos released a networked multi-zone audio system comprising several components designed to communicate and coordinate with one another over a data network in order to play back media across the system. One such component was a "zone player," referred to commercially as a "ZonePlayer" (model number "ZP100"). The ZonePlayer could be coupled to a user's home network and could communicate with the other components of the system as well

as entities on the Internet. Another such component in the Sonos System were "controlling devices," referred to individually as a "controller," that operated to communicate with the ZonePlayers.   There were two types of "controlling devices" that could be used with the ZonePlayers – a computer installed with Sonos's "Desktop Controller" software or a dedicated "Sonos Controller" handheld device (model number "CR100").   As I discuss later, Sonos's networked multi-zone audio system that was released in January 2005 provided a new paradigm that advanced over the "conventional multi-zone audio system[s]" described in the '885 Patent.
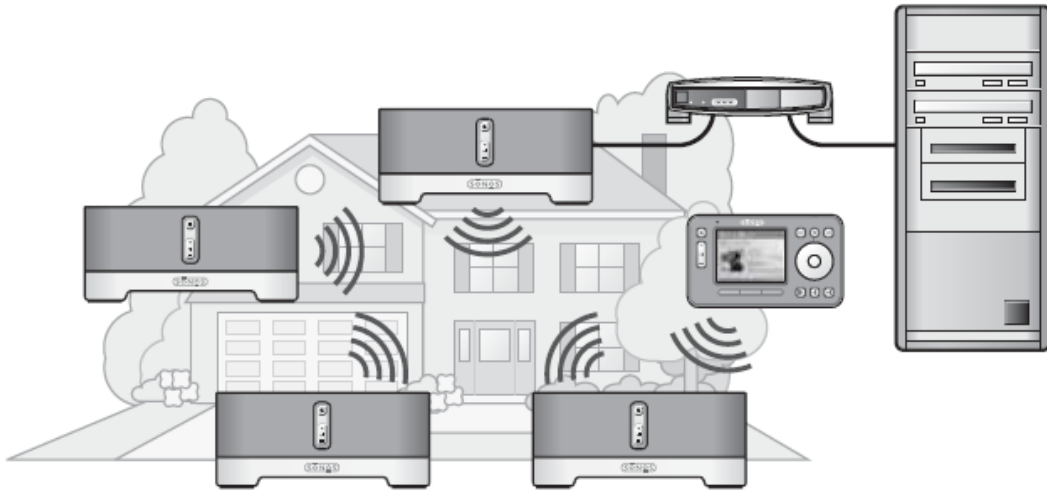
The "Sonos Digital Music System User Guide" dated April 2005 ("Sonos 2005 User Guide") (Lambourne Dep. Exs. 1077-1078), at 6.

186.   ZonePlayers could be positioned about a user's house and could be given names reflecting the rooms in which the ZonePlayers were located, such as "Kitchen," "Jack's Bedroom," or "Garden." Operationally, each ZonePlayer was configured to retrieve media from one or more music sources that were either located on a user's home storage device, such a network-accessible storage device, or via a music service accessible via the Internet, such as Rhapsody, among others. The controllers of the system were configured to browse the available music libraries of the music sources and to communicate with the ZonePlayers of the system and to cause the ZonePlayers to retrieve and output media from the music services. The controllers of the system were also

1   operable to control the ZonePlayers in their output of audio, including adjusting the volume of

2   playback, skipping to a previous or next track, and pausing the playback, etc.
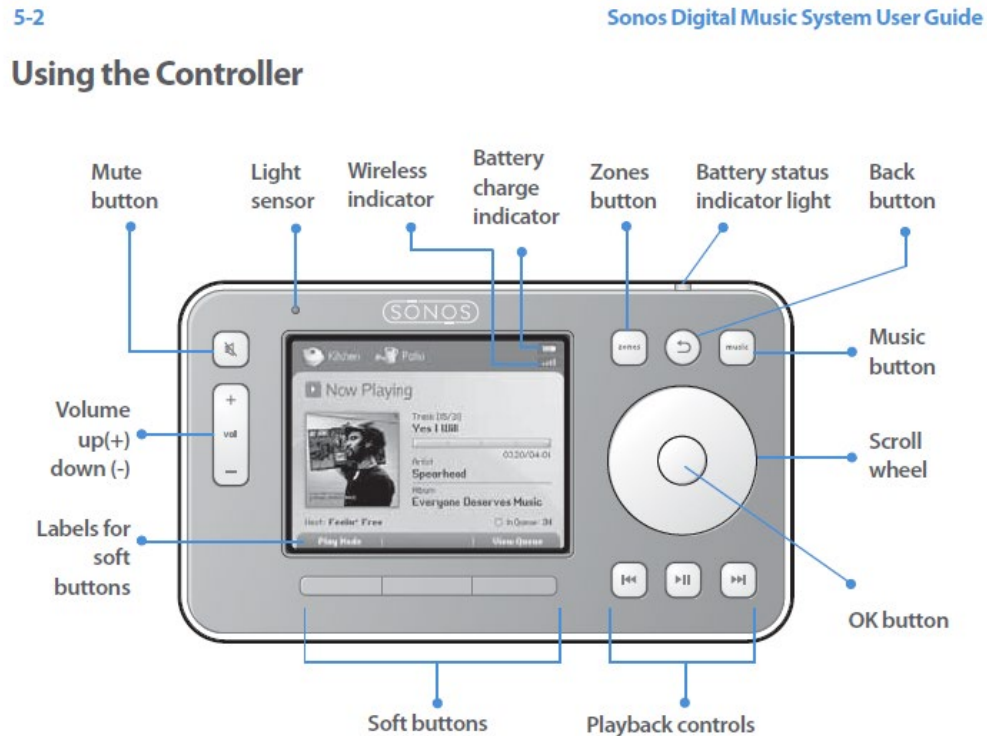
Sonos 2005 User Guide (Lambourne Dep. Exs. 1077-1078), at 60.

187.   The controllers of the system were also operable to communicate with the ZonePlayers of the system to configure the ZonePlayers to operate with one another. In this respect, the Sonos System enabled a user to create "zone groups," which were groups of two or more ZonePlayers that were configured to coordinate with one another over the network to output audio in synchrony. The Sonos 2005 User Guide includes a section entitled "Zone groups" where it describes the grouping capabilities of the Sonos ZonePlayers that existed at the time. That "Zone groups" section begins by explaining as follows:

> A zone can be grouped together with any other zone(s) to form a zone group. This will cause all the zones in the zone group to play the same music. You can link or drop zones from a zone group while the music is playing. You can also link all the ZonePlayers in your house with one touch by selecting **All Zones-Party Mode**.

Sonos 2005 User Guide at 3-11; *see also id*. at 5-8. In turn, the "Zone groups" section describes

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the process for creating a "zone group" as follows:

To link a zone to a zone group

You can create a zone group first and then select music to play, or you can add a zone to a zone group where music is already playing.

> **Note:** Any zones you link will automatically drop their current music queue and begin to play the music queue from the highlighted zone. You may sometimes want to save your music queue before linking a zone. See "To create a Sonos playlist" on page 3-17.

1. From the **Zones** pane, highlight the zone you want to link another zone or zone group to.
2. Choose one of the following options:
   - Click **Link Zone.**

   Or,

   - From the **Zones** menu, click **Link Zone.**

   Link Zone

   Select a zone to link to:
   Kitchen

   [All Zones - Party Mode]
   Jack's room

   OK   Cancel

3. Select a zone to add to the group, and click **OK.** If you want to join all the zones in your house to this music queue, select **All Zones-Party Mode**. All of your ZonePlayers will then play the same music until you drop the zones from the zone group.

> **Note:** The order in which you add a zone makes a difference. If you select **Link Zone** from a zone where there is no music playing, any zone you link to it will also be silent.

Id. at 3-12.

188.   The Sonos 2005 User Guide also includes a similar "Zone groups" section in the chapter on the Sonos Controller, as shown below:

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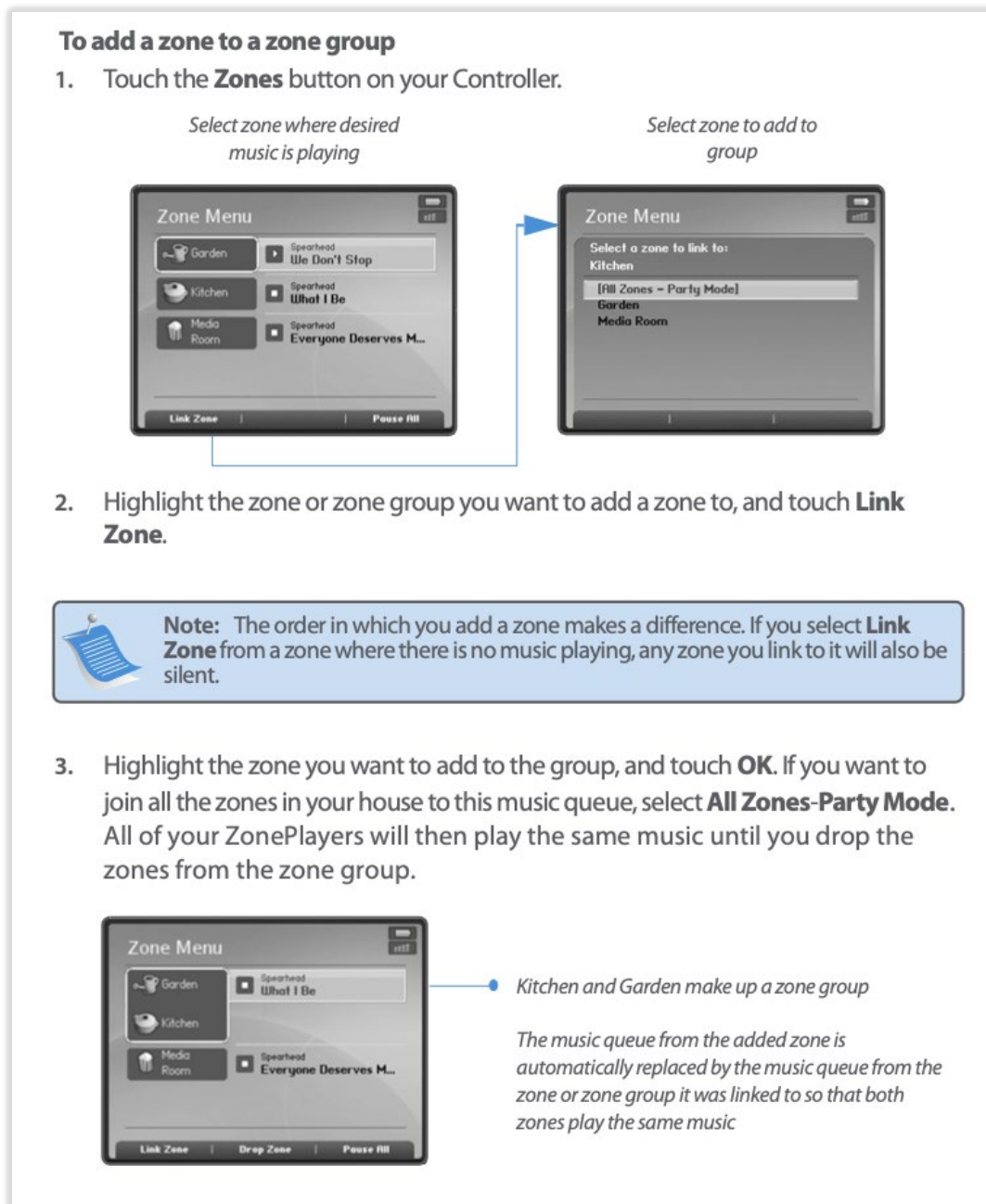
Id. at 5-9.

189.   As the above excerpts from the Sonos 2005 User Guide show, a user could create a "zone group" by selecting a specific set of ZonePlayers in a Sonos system to group together into the "zone group," such as a Kitchen + Jack's Bedroom group or a Garden + Kitchen group, and the act of creating this new "zone group" would then "*cause all the zones in the zone group to play the same music*." *Id.* at 3-11. Additionally, the Sonos 2005 User Guide notes that "[a]ny zones

you link [into a zone group] *will automatically drop their current music queue and begin to play the music queue from the highlighted zone*," and that if "there is no music playing" in the highlighted zone, then "any zone you link to it will also be silent." *Id.* at 3-12, 5-8, 5-9.

190.   In a similar manner, a ZonePlayer could be removed from an active group of which it is a part by selecting the Drop Zone option and selecting the ZonePlayer desired to be removed from the active "zone group."
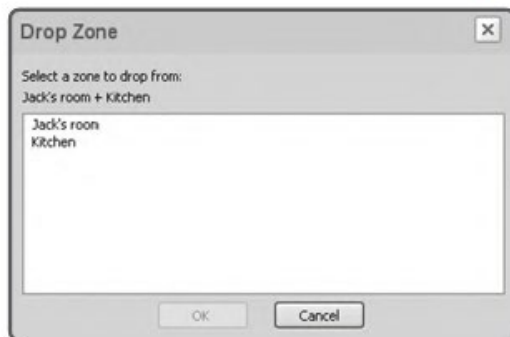
Id. at 31.

B.   Sonos Forums

191.   Dr. Schonfeld's "Sonos Forums" reference consists of forum posts from two separate threads: (1) a thread entitled "Macro / presets," and (2) a thread entitled "virtual zones and zone grouping." Schonfeld Op. Report at ¶¶ 122, 125. In his Opening Report, Dr. Schonfeld opines that "the Sonos Forums were publicly available at least as of September 2005, making them

267.   Lindemann also discloses that a "Group Selection Switch" may be provided that "allows a loudspeaker to be assigned to one of many groups of loudspeakers," and that there may be "status information contain[ing] commands to enable or disable a particular group of speakers" as well as "[a]nother status message [that] determines enabling of different speaker modes according to speaker group." *Id*. at ¶¶ 64-66, FIG. 18 (illustrating an example of a "Group Selection Switch 1800").   For synchronization, Lindemann discloses that its "synchronization" involves calculations based on "[t]he Symbol Clock and the Digital Audio Frame Clock [that] are input to the Audio Sample Clock Generator 805." *Id.* at ¶62.

XII.   VALIDITY OF THE '885 PATENT

A.   Sonos's 2005 System

268.   In his Opening Report, Dr. Schonfeld opines that claim 1 of the 885 Patent is rendered obvious by a reference he calls the "Sonos System" either alone or in combination with one of Sonos Forums, Squeezebox, Millington, Nourse, Rajapakse, or Lindemann. I disagree.

269.   As an initial matter, it is my opinion that Sonos's own system failed to disclose at least the following limitations:

- A "zone scene" comprising a "predefined grouping of zone players . . . that are to be configured for synchronous playback of media when the . . . zone scene is invoked";

- **[1.5] / [1.6]**   "while operating in a standalone mode in which the first zone player is configured to play back media individually in a networked media playback system comprising the first zone player and at least two other zone players," "(i) receiving, from a network device over a data network, a first indication that the first zone player has been added to a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked";

- **[1.5] / [1.7]**   while operating in a standalone mode in which the first zone player is configured to play back media individually in a networked media playback system comprising the first zone player and at least two other zone players," "(ii) receiving, from the network device over the data network, a second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than

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the third zone player";

- **[1.8]** "after receiving the first and second indications, continuing to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation";

- **[1.9]** "after the given one of the first and second zone scenes has been selected for invocation, receiving, from the network device over the data network, an instruction to operate in accordance with a given one of the first and second zone scenes respectively comprising a given one of the first and second predefined groupings of zone players"; and

- **[1.10]** "based on the instruction, transitioning from operating in the standalone mode to operating in accordance with the given one of the first and second predefined groupings of zone players such that the first zone player is configured to coordinate with at least one other zone player in the given one of the first and second predefined groupings of zone players over a data network in order to output media in synchrony with output of media by the at least one other zone player in the given one of the first and second predefined groupings of zone players."

270.   Additionally, it is my opinion that these limitations that were missing from Dr. Schonfeld's "Sonos System" reference also would not have been obvious either based on the "Sonos System" reference alone or based on Sonos's 2005 system in combination with one of Sonos Forums, Squeezebox, Millington, Nourse, Rajapakse, or Lindemann. This opinion is based in part on the fact that I have not seen any evidence showing an apparent reason why a POSITA in 2005-06 would have been motivated to modify the "Sonos System" reference and/or combine it with another reference in the various different ways proposed by Dr. Schonfeld in order achieve the claimed invention of the '885 Patent. I have also seen other objective, real-world evidence demonstrating that a POSITA in 2005-06 would not have found the claim 1 of the '885 Patent to have been obvious, which stands in stark contrast to Dr. Schonfeld's failure to support his obviousness opinions with any objective evidence.

271.   My opinions regarding Dr. Schonfeld's "Sonos System" reference are supported by the fact that the "Sonos System" reference as well as all but one of the secondary references that Dr. Schonfeld has relied upon were considered by U.S. Patent Office during prosecution of the '885 Patent, which was then allowed to issue over these references. In particular:

- With respect to the "Sonos System" reference, the "Sonos Digital Music System User Guide, Version: 050801, Aug. 2005, 114 pages" was considered during prosecution

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In order to achieve playing different audio sources in different audio players, the traditional multi-zone audio system is generally either hard-wired or controlled by a pre-configured and pre- programmed controller. While the pre-programmed configuration may be satisfactory in one situation, it may not be suitable for another situation. For example, a person would like to listen to broadcast news from his/her favorite radio station in a bedroom, a bathroom and a den while preparing to go to work in the morning. The same person may wish to listen in the den and the living room to music from a compact disc in the evening. In order to satisfy such requirements, two groups of audio players must be established. In the morning, the audio players in the bedroom, the bathroom and the den need to be grouped for the broadcast news. In the evening, the audio players in the den and the living room are grouped for the music. Over the weekend, the audio players in the den, the living room, and a kitchen are grouped for party music. Because the morning group, the evening group and the weekend group contain the den, it can be difficult for the traditional system to accommodate the requirement of dynamically managing the ad hoc creation and deletion of groups.

There is a need for dynamic control of the audio players as a group. With a minimum manipulation, the audio players may be readily grouped. In a traditional multi-zone audio system, the audio players have to be adjusted one at a time, resulting in an inconvenient and non- homogenous audio environment.

'885 Patent at 1:62-2:23.

284.   After introducing the limitations of "conventional multi-zone audio system[s]," the '885 Patent describes a new type of *networked* multi-zone audio system comprised of data network devices that are configured to process and output audio, referred to as "zone players." *Id*. at FIG. 1, 4:49-6:27. Unlike the audio players in "conventional multi-zone audio system[s]," these "zone players" have processors and memory, and are capable of communicating with other data network devices, such as "controlling devices," "audio sources," and other "zone players," over a data network. *Id*. These distinctions alone improved upon "conventional multi-zone audio system[s]" comprised of "audio players" that were connected by speaker wire to a centralized A/V receiver and did not have the capability to communicate over a data network or process digital data, which made such systems "inflexible," "difficult" to use, and "not [] suitable" for many users. *See* '885 Patent at 1:46-2:16.

285.   I understand that this description of the networked multi-zone audio system in the '885 Patent was based on Sonos's own networked multi-zone audio system, which Sonos began working on in 2002 and commercially released in January 2005 under the name "The Sonos Digital

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Music System." *See, e.g.,* https://www.sonos.com/en-us/how-it-started; Millington Dep. Tr. at 113:14-20. In Sonos's networked multi-zone audio system that was released in January 2005, the "zone players" were called "ZonePlayers" (model number "ZP100"), and there were two types of "controlling devices" that could be used with the ZonePlayers – a computer installed with Sonos's "Desktop Controller" software or a dedicated "Sonos Controller" handheld device (model number "CR100"). Sonos's networked multi-zone audio system that was released in January 2005 provided a new paradigm that advanced over the "conventional multi-zone audio system[s]" described in the '885 Patent.

286.   Each of the "zone players" in the networked multi-zone audio system described in the '885 Patent (and in Sonos's own system at the time) was capable of playing back audio individually (*i.e.*, on its own). *See, e.g.*, '885 Patent at 4:44-5:2, 5:21-6:27, 6:39-43. In addition, each of the "zone players" in the networked multi-zone audio system described in the '885 Patent (and in Sonos's own system at the time) was capable of being grouped together with one or more other "zone players" so that the grouped "zone players" become configured for synchronous playback. *Id.* at 5:16-20, 5:57-6:7, 6:43-48, 7:35-41, 7:58-9:30, 10:4-11:20. In this respect, each such "zone player" operated in one of two states at any given time: (i) a first state in which the "zone player" is not actively grouped with any other "zone player" but rather is configured to play back audio individually (*i.e.*, a non-grouped or standalone mode), whether or not the "zone player" is engaging in active playback, or (ii) a second state in which the "zone player" is actively grouped with one or more other "zone players" such that it is configured for synchronous playback as part of that group (*i.e.*, a grouped mode), whether or not the group is engaging in active playback. *Id*.

287.   The '885 Patent goes on to explain that in a networked multi-zone audio system like the one described in the '885 Patent, one process for grouping "zone players" together for synchronous playback involved a user selecting a particular set of "zone players" to group together in an ad-hoc manner, one-by-one, when the user wishes to listen to audio across the set of "zone players," which would then create a temporary, ad-hoc group that was automatically activated for

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synchronous group at the time of creation. '885 Patent at 8:30-44; '407 Provisional[8], at App'x A, 1. The '885 Patent also notes that this ad-hoc grouping process was being utilized by Sonos's own networked multi-zone audio system at the time. *See* '885 Patent at 8:42-44 (referring to this ad-hoc grouping process as the "current mechanism"); '407 Provisional, at App'x A, 1 (explaining that "[c]urrently in the Sonos UI, zone groups are created by manually linking zones one at a time until the desired zone grouping is reached"). However, the '885 Patent notes that this ad-hoc grouping approach "may sometimes be quite time consuming," because each time the user wishes to activate a different group for synchronous playback, the user has to repeat the process of selecting each of the "zone players" to include in the group even if it is a grouping of "zone players" that had previously been created by the user on many other occasions in the past. '885 Patent at 8:42-45, 54-56. This was a byproduct of the fact that a group of "zone players" created using the ad-hoc process was temporary – it only existed during the limited time that the group was activated for playback, and as soon as a user wanted to use a "zone player" in an existing group for individual playback or wanted to create a new group that included one or more of the "zone players" in the existing group, the existing group would need to be destroyed. Thus, the only way a user could use a group having that same group membership again in the future was by re-creating a new temporary group that included the same members as the previously-existing group.

288.   In view of these drawbacks with the existing ad-hoc grouping process, the '885 Patent disclosed a new process for grouping "zone players" together for synchronous playback in a networked multi-zone audio system using a "zone scene," which is described as a "predefined" group of "zone players" that is first pre-configured by a user and is then made available to be selected for invocation in the future so that a user can later activate the group for synchronous playback on demand. *Id.* at 8:45-9:30, 10:4-11:20, FIGs. 5A-B, 6; *see also* '407 Provisional at App'x A; Case No. 20-6754, D.I. 309 at 4 (the Court finding that "the '885 Patent allows a user to customize and save multiple groups of smart speakers or other players . . . and then later 'activate a customized group, called a 'zone scene,' on demand), 8 (the Court noting that the "basic purpose

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[8] As I explained in my Opening Report, the '407 Provisional is incorporated by reference into the '885 Patent.

of the invention . . . is to allow users to pre-save customized speaker groups and later 'invoke' the named group on demand"). This new grouping process enables a user to activate a user-created group of "zone players" for synchronous playback in a more seamless manner, because instead of having to select each "zone player" to include in the group in a "time consuming" ad-hoc manner at the time that the user wishes to activate the group, the user can simply select a previously-saved "zone scene" comprising a predefined version of the group.

289.   As disclosed in the '885 Patent, grouping "zone players" using a "zone scene" involves two separate and distinct phases. During a first "setup" phase, a user can use a controller device to create and save a new "zone scene" for future use, which involves adding the particular "zone players" to be included as members of a predefined group and also assigning a name to the "zone scene," but the predefined group of "zone players" is not activated for synchronous playback at this time. *See, e.g.*, '885 Patent at 8:45-51, 10:4-19, 10:36-52, 11:12-19; '407 Provisional at App'x A, 1-2, 9-16. Rather, the group of "zone players" that is predefined and saved at a user's request as part of the "zone scene" initially exists in an inactive state. Thereafter, during a second "invocation" phase, a user can use a controller device to "invoke" a previously-created and saved "zone scene," which is what causes the predefined group of "zone players" to become activated for synchronous playback. *See, e.g.*, '885 Patent at 9:16-20, 10:53-63, 11:12-19, '407 Provisional at App'x A, 1-8. In other words, it is this later, post-creation act of "invoking" the previously-saved "zone scene" that causes each "zone player" in the predefined and pre-saved group to configure itself to play back audio in synchrony with the other member(s) of the predefined and pre-saved group – prior to that time, a "zone player" may receive an indication that it is a member of the previously-created "zone scene" that facilitates the saving of the previously-created "zone scene," but the "zone player" will not automatically configure itself to play back audio in synchrony with the other member(s) of the predefined group.

290.   This two-phase process for grouping "zone players" whereby a user-created group is able to exist in an inactive state so that it can later be invoked is distinct from the user-created groups that could be created using prior art grouping processes discussed in the '885 Patent, which involved only a single phase during which a group was automatically activated at the same time

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303.   Second, the footer bears the legend "FOR INTERNAL USE ONLY," which further confirms that this was a working draft of a confidential feature that was still under development and not yet released.

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304.   This document alone definitively establishes that the ZonePlayers in Sonos's system as it existed in 2005 did not have the capability to be added to a "zone scene."

305.   The "Sonos Digital Music System User Guide" dated April 2005 ("Sonos 2005 User Guide") likewise establishes that the ZonePlayers in Sonos's 2005 system did not have the capability to be added to a "zone scene." For instance, in the chapter on the Sonos "Desktop Controller Software" for Windows, the Sonos 2005 User Guide includes a section entitled "Zone groups" where it describes the grouping capabilities of the Sonos ZonePlayers that existed at the time. That "Zone groups" section begins by explaining as follows:

> A zone can be grouped together with any other zone(s) to form a zone group. This will cause all the zones in the zone group to play the same music. You can link or drop zones from a zone group while the music is playing. You can also link all the ZonePlayers in your house with one touch by selecting **All Zones-Party Mode**.

Sonos 2005 User Guide (Lambourne Dep. Exs. 1077-1078), at 3-11; *see also id*. at 5-8.

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306.   In turn, the "Zone groups" section describes the process for creating a "zone group"

2   as follows:

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To link a zone to a zone group

You can create a zone group first and then select music to play, or you can add a zone
to a zone group where music is already playing.

> **Note:** Any zones you link will automatically drop their current music queue and
> begin to play the music queue from the highlighted zone. You may sometimes
> want to save your music queue before linking a zone. See "To create a Sonos
> playlist" on page 3-17.

1. From the **Zones** pane, highlight the zone you want to link another zone or zone
    group to.

2. Choose one of the following options:

    • Click **Link Zone.**

    Or,

   • From the **Zones** menu, click **Link Zone.**

3. Select a zone to add to the group, and click **OK.** If you want to join all the zones in
    your house to this music queue, select **All Zones-Party Mode**. All of your
    ZonePlayers will then play the same music until you drop the zones from the
    zone group.

> **Note:** The order in which you add a zone makes a difference. If you select **Link
> Zone** from a zone where there is no music playing, any zone you link to it will also be
> silent.

Id. at 3-12.

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307.   The Sonos 2005 User Guide also includes a similar "Zone groups" section in the chapter on the Sonos Controller, as shown below:
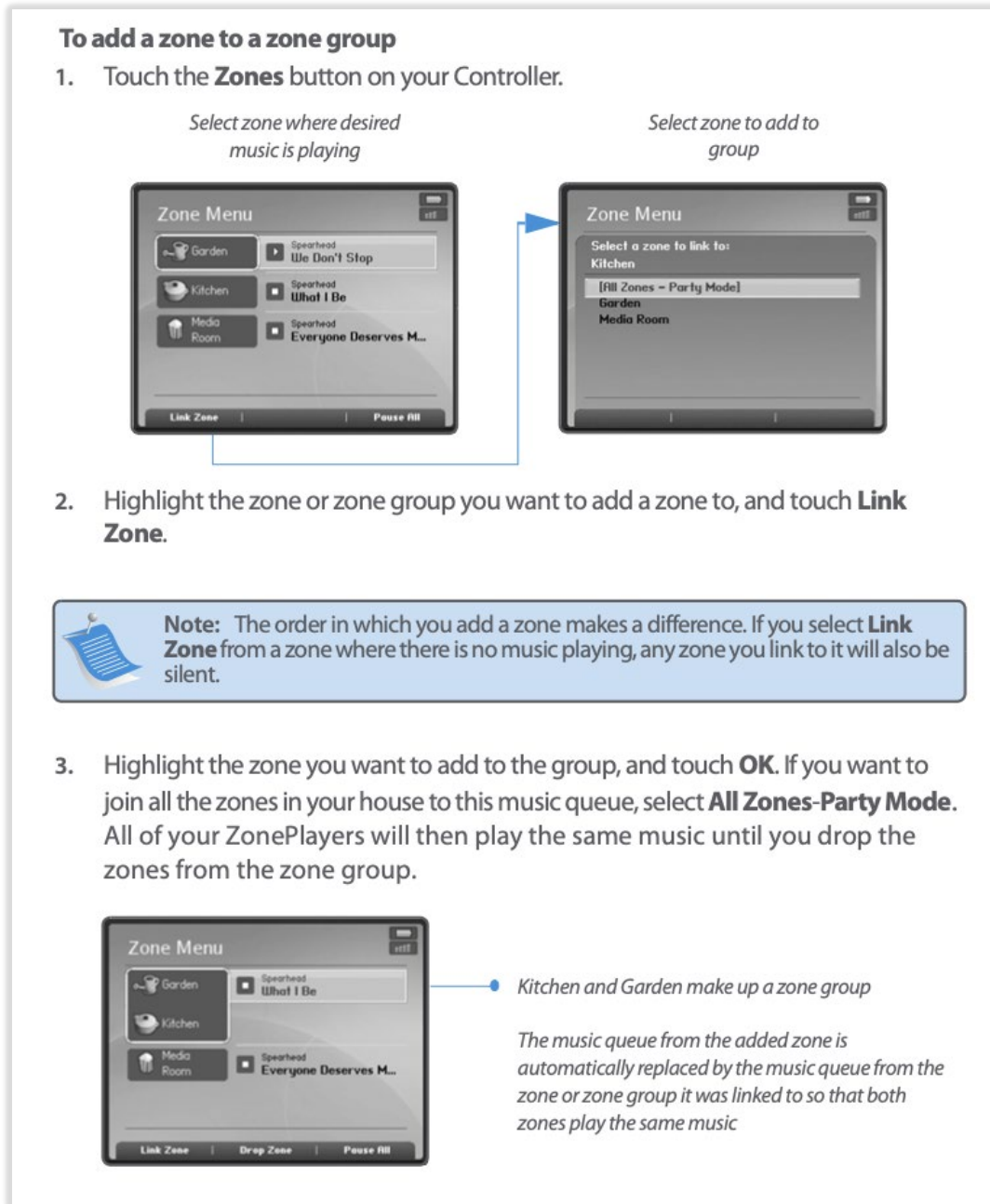
Id. at 5-9.

308.   As demonstrated by the above excerpts from the Sonos 2005 User Guide, a user could create a new "zone group" by selecting a specific set of ZonePlayers in a Sonos system to group together into the "zone group," such as a Kitchen + Jack's Bedroom group or a Garden + Kitchen group, and the act of creating this new "zone group" would then "*cause all the zones in*

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the zone group to play the same music." *Id*. at 3-11. Additionally, the Sonos 2005 User Guide notes that "[a]ny zones you link [into a zone group] *will automatically drop their current music queue and begin to play the music queue from the highlighted zone*," and that if "there is no music playing" in the highlighted zone, then "any zone you link to it will also be silent." *Id*. at 3-12, 5-8, 5-9.

309.   Based on the foregoing description, it is clear that a "zone group" created in this manner was a temporary, ad-hoc group that was automatically activated at the same time it was created such that the ZonePlayers added to the "zone group" were automatically configured for synchronous audio playback at the time of creation and could not thereafter be used for individual audio playback until the "zone group" was altered to remove the ZonePlayers. And as explained above, such a temporary, ad-hoc group is distinctly different from a "zone scene," which comprises a customized group that is "predefined" and "previously-saved" at a user's request in advance of being activated for synchronous playback and initially exists in an inactive state such that the "zone players" added to the "zone scene" are "*to be configured* for synchronous playback" at a future time when the "zone scene" is invoked, but do not change their operating mode for audio playback at the time of creation and can thereafter be used for individual audio playback while the "predefined," "previously-saved" group remains in existence and is available to be "selected for invocation" in the future.

310.   Thus, for at least these reasons, it is my opinion that a "zone group" created by selecting a specific set of ZonePlayers in a Sonos system to group together into the "zone group" in an ad-hoc manner does not constitute a "zone scene."

311.   As demonstrated by the above excerpts from the Sonos 2005 User Guide, a user could also create a new "zone group" by selecting the "All Zones-Party Mode" option, which would then cause all of the ZonePlayers in a Sonos system to "play the same music until you drop the zones from the zone group." *Id*. at 3-12, 5-9. This "All Zones-Party Mode" option, which was hard-coded into the Desktop Controller and Sonos Controller software, provided an alternative way for a user to create a new "zone group" including all ZonePlayers in a Sonos system that avoided the need for the user to select each of the group members one at a time during the process

of creating the "zone group." However, this "All Zones-Party Mode" option also did not meet the requirements of a "zone scene," for several reasons.

312.   First, because the "All Zones-Party Mode" option was hard-coded into the Desktop Controller and Sonos Controller software, it was not a user-created, customized group that was "predefined" and "previously-saved" at a user's request as part of an initial "setup" phase, which is a required aspect of a "zone scene." Case No. 20-6754, D.I. 309 at 4 (the Court finding that "the '885 Patent allows a *user to customize* and save multiple groups of smart speakers or other players . . . and then later 'activate a customized group, called a 'zone scene,' on demand), 8 (the Court noting that the "basic purpose of the invention . . . is to allow *users to pre-save customized speaker groups* and later 'invoke' the named group on demand"), 12 (the Court finding that *"[t]he claimed ability to customize and save overlapping speaker groups* and easily control group playback represents a clear technological improvement over the 'conventional multi-zone audio system,' which, as the specification explained, presents significant technological and physical obstacles to forming speaker groups").

313.   Second, because the "All Zones-Party Mode" option was hard-coded into the Desktop Controller and Sonos Controller software, the ZonePlayers in a Sonos system were also never "added" to the "All Zones-Party Mode" option by a user via a "network device" in advance of that "All Zones-Party Mode" option being selected, which is another required aspect of a "zone scene." In fact, the evidence I have reviewed shows that the ZonePlayers in a Sonos system were never even aware that the "All Zones-Party Mode" option existed – it was exclusively a controller-side concept that provided an alternative workflow for a user to create a new "zone group." [9] Thus, a "zone group" that was created using the "All Zones-Party Mode" option was no different than a temporary "zone group" using the other ad-hoc grouping process. Indeed, in both cases, a ZonePlayer that was added to the "zone group" by the user would receive the same message (a SetAVTransportURI message containing a URI argument set to "x-rincon:<GROUP

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[9] For this same reason, and as explained further below, a ZonePlayer in Sonos's 2005 system would have never received any "indication" that it "has been added" to the "All Zones-Party Mode" option, as required by limitations 1.6-1.7.

COORDINATOR UUID>") and would then automatically configure itself for synchronous playback as part of that "zone group" during the limited period of time that the "zone group" was activated, after which time the "zone group" would be destroyed.

314.   Thus, for at least these reasons, it is my opinion that the "All Zones-Party Mode" option provided by Sonos's 2005 system was merely just a different way to create a "zone group," and also does not constitute a "zone scene." *See also* SONOS-SVG2-00026839-58 at SONOS-SVG2-00026840 (explaining that the "Zone Scene feature" is "similar to the current Party Mode setting that is available" but that "*the Zone Scenes feature is much more flexible and powerful*").

315.   I further note that the Sonos 2005 User Guide never uses the term "zone scenes" or otherwise describes any technology that would have enabled a user to (i) first create a group of ZonePlayers that was "predefined" and "previously-saved" in advance of being activated and then (ii) later select that group for "invocation" in order to activate it, which further confirms that the ZonePlayers in Sonos's 2005 system did not have the capability to be added to a "zone scene." [10]

316.   I have also seen various other Sonos documents confirming that the ZonePlayers in Sonos's 2005 system did not have the capability to be added to a "zone scene." As one example, in an April 2005 email chain between Sonos employees Rob Lambourne (inventor of the '885 Patent) and Andrew Schulert, Mr. Schulert notes that "one of the problems with our system is we don't have a way of permanently linking zones together." SONOS-SVG2-00026888. In response, Mr. Lambourne proposes a feature that would "[a]llow a user to save Zone Profiles" that "would allow a user . . . to put their Zones into predefined groups…" *Id.* Mr. Schulert's comments noting that the current Sonos system does not have a way to create "permanent" groups and Mr. Lambourne's proposal to add a "predefined groups" feature in April 2005 further confirms to me that the ZonePlayers in Sonos's system at this time did not have the capability to be added to a "zone scene."

317.   As another example, entries in Mr. Lambourne's notebook dated October-

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[10] The evidence I have reviewed also confirms that there was no ability for a user to creating a "zone group" in Sonos's 2005 system that was "according to a common theme," such as by assigning it a name, which fails to meet the requirements of Google's proposed construction of a "zone scene.

group" in one of the two ways described in the Sonos 2005 User Guide. *See* Schonfeld Op. Report at ¶ 217 (opining that "[t]he Sonos System allows a Zone Player to receive a first indication in the form of network messages passed from the controller indicating that the Zone Player is to synchronously playback media with other Zone Players when the 'zone scene' that those players were added to is invoked by selecting that "zone scene" for synchronous playback," where "[t]he 'zone scene' may be a group of speakers either defined by the user or predefined by the system, such as 'Kitchen,' 'Dining Room,' 'Party Mode,' etc."), ¶ 218 (opining that "[t]he Sonos System user manual also describes using the CR100 controller as well as the Mac and Windows desktop controllers to send the claimed indication to the Zone Player"), ¶ 219 (opining that "[t]he Sonos System allows a user to add a speaker to a group and send an indication of that addition" and point to the "Zone groups" section at 3-12 of the Sonos 2005 User Guide); ¶ 222 (citing to deposition testimony from Mr. Lambourne where he was explaining that "the Party Mode in our original controller was a command sent by the control design that would tell the speakers in that moment to go for a group, and Party Mode was the term we gave to all the speakers together"); ¶¶ 225-229 (explaining that when "the controller adds [a] first Zone Player to a first joinee group," a "SetAVTransportURI SOAP action with a Rincon group URI that identifies the group to join (joinee group)" is sent from the "controller" to the "first Zone Player" and is then received and handled by the "first Zone Player").

346.   I disagree. While it is correct that when a user created a new "zone group" in one of the two ways described in the Sonos 2005 User Guide, the Sonos controller would have sent a SetAVTransportURI message containing a URI argument set to "x-rincon:<GROUP COORDINATOR UUID>" to at least one ZonePlayer that had been added to the new "zone group," that SetAVTransportURI message was <u>not</u> an "indication that the [ZonePlayer] has been added to a *first zone scene*." Instead, that SetAVTransportURI message was a direction for the ZonePlayer to enter into the new "zone group," which is not a "zone scene" for all of the reasons I have already explained above. For instance, a "zone group" is not "predefined" and "previously-saved" at a user's request in advance of being activated for synchronous playback, nor does the "zone group" initially exist in an inactive state such that the ZonePlayers added to the group are

"*to be configured* for synchronous [audio] playback" at a future time when the group is invoked, but do not change their operating mode for audio playback at the time of creation and can thereafter be used for individual audio playback while the "predefined," "previously-saved" group remains in existence and is available to be "selected for invocation" in the future. To the contrary, a "zone group" was automatically activated at the time of being created by the user such that the ZonePlayers added to the "zone group" were automatically configured for synchronous audio playback at the time of creation and could not thereafter be used for individual audio playback until the "zone group" was altered to remove the ZonePlayers.

347.   Thus, nothing in Dr. Schonfeld's Opening Report alters my opinion that the ZonePlayers in Sonos's 2005 system did not have the functional capability required by limitations 1.5 / 1.6.

4.   Sonos's 2005 System Did Not Meet Limitations 1.5 / 1.7

348.   Limitations 1.5 / 1.7 of the '885 Patent require the "first zone player" to be programmed with the capability for, "while operating in a standalone mode in which the first zone player is configured to play back media individually in a networked media playback system comprising the first zone player and at least two other zone players," "(ii) receiving, from the network device over the data network, a second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than the third zone player."

349.   In my opinion, Sonos's 2005 system did not meet this requirement.

350.   As I explained above, the evidence I have reviewed establishes that the ZonePlayers in Sonos's 2005 system did not have any capability to be added to a "zone scene" comprising a "predefined grouping of zone players . . . that are to be configured for synchronous playback of media when the . . . zone scene is invoked," and for this reason alone, a ZonePlayer in Sonos's 2005 system did not have the capability to "receiv[e], from the network device over the data network, a second indication that the [ZonePlayer] has been added to a second zone scene

comprising a second predefined grouping of [ZonePlayers] including at least the [recipient ZonePlayer] and a third [ZonePlayer] that are to be configured for synchronous playback of media when the second zone scene is invoked," where the second ZonePlayer included in the "first zone scene" is different from the third ZonePlayer included in this "second zone scene."

351.   Additionally, a ZonePlayer in Sonos's 2005 system did not have the capability to receive a "second indication that [it] has been added to a second zone scene comprising a second predefined grouping of [ZonePlayers]" while remaining a member of a "first zone scene comprising a first predefined grouping of [ZonePlayers]" such that the ZonePlayer is then a member of multiple different "zone scenes" that are both in existence and available to be "selected for invocation," which is required by limitations 1.5 / 1.7 when viewed in combination with the other surrounding claim language and serves as an additional reason why Sonos's 2005 system did not meet limitations 1.5 / 1.7 of the '885 Patent.

352.   Additionally yet, with respect to the hard-coded "All Zones-Party Mode" option identified by Dr. Schonfeld above, in addition to the fact that it was not a "zone scene" as explained above, a ZonePlayer would have never received any "indication" that it "has been added" to "All Zones-Party Mode" option, as required by limitation 1.7.

353.   Despite the clear absence of any "zone scenes" capability from Sonos's 2005 system, in his Opening Report, Dr. Schonfeld opines at paragraph 232 that "the Sonos System discloses or renders obvious" claim limitation 1.7, and while not entirely clear, this opinion appears to be based on a theory that a ZonePlayer in Sonos's 2005 system would have received "a second indication that the [ZonePlayer] has been added to a second zone scene . . ." from a Sonos controller when a user removed the ZonePlayer from a first "zone group" and then added the ZonePlayer to a second "zone group" in one of the two ways described in the Sonos 2005 User Guide. *See* Schonfeld Op. Report at ¶¶ 233-238 (describing a scenario where a first ZonePlayer ZP1 is "drop[ped]" from a "previously created (see prior limitation) group ZP2 + ZP1" and then added as a "group member" of a new "group comprising ZP3 + ZP1 and stating that "[a]s above, the 'indication' may be a SetAVTransportURI SOAP action specifying a Rincon group URI with the group coordinator UUID"); ¶ 239 (explaining that "ZP1 may be joined to ZP2 and ZP3 through

the 'party mode' / 'all zones' group" and that "[i]n this instance, ZP1 will receive from the controller a second indication that the zone player is joined to the 'party mode' group, which is configured for synchronous playback").

354.   I disagree. While it is correct that when a user removed a ZonePlayer from a first "zone group" and then added the ZonePlayer to a second "zone group" in one of the two ways described in the Sonos 2005 User Guide, the Sonos controller may have sent a SetAVTransportURI message containing a URI argument set to "x-rincon:<GROUP COORDINATOR UUID>" to the ZonePlayer (assuming the ZonePlayer was not the coordinator of the second "zone group"), that SetAVTransportURI message was <u>not</u> an "indication that the [ZonePlayer] has been added to a *second zone scene*." Instead, that SetAVTransportURI message was a direction for the ZonePlayer to enter into the new "zone group," which is not a "zone scene" for all of the reasons I have already explained above.

355.   Moreover, it would have only been possible for a Sonos controller to send such a SetAVTransportURI message for the second "zone group" after the first "zone group" had been destroyed and was no longer in existence, which fails to meet the claimed requirement of receiving "a second indication that [the ZonePlayer] has been added to" a second "zone group" while remaining a member of a first "zone group" that is still in existence such that both the first "zone group" and the second "zone group" are thereafter both available to be "selected for invocation."

356.   Thus, nothing in Dr. Schonfeld's Opening Report alters my opinion that the ZonePlayers in Sonos's 2005 system did not have the functional capability required by limitations 1.5 / 1.7.

5.   <u>Sonos's 2005 System Did Not Meet Limitation 1.8</u>

357.   Limitation 1.8 of the '885 Patent requires the "first zone player" to be programmed with the capability for "after receiving the first and second indications, continuing to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation."

358.   In my opinion, Sonos's 2005 system did not meet this requirement for multiple reasons.

sources" in Sonos's 2005 system. Moreover, even if one were to have recognized a desire for "greater flexibility in assigning and updating group coordinators and channel sources," I fail to see how that would have motivated a POSITA in 2005-06 to modify Sonos's 2005 system in the many ways that would have actually been required to achieve the claimed invention.

418.   Finally, because there is no evidence that a POSITA in 2005-06 would have been motivated to modify Sonos's 2005 system in the many ways proposed by Dr. Schonfeld, it appears that Dr. Schonfeld has used the asserted claims as a roadmap to reach his conclusion that a POSITA would have found the claimed invention obvious based on Sonos's 2005 system, which I understand to be improper.

419.   Thus, for these reasons, it is my opinion that claim 1 of the '885 Patent is not rendered obvious by Sonos's 2005 system alone.

9.   Sonos's 2005 System Combined with Sonos Forums

420.   In his Opening Report, Dr. Schonfeld opines that claim 1 of the '885 Patent is rendered obvious by Sonos's 2005 system in combination with the Sonos Forums. *See* Schonfeld Op. Report at ¶¶ 6, 230. I disagree – in my opinion, claim 1 of the '885 Patent is not rendered obvious by Sonos's 2005 system in combination with the Sonos Forums, and Dr. Schonfeld's opinion to the contrary is flawed for several reasons.

421.   First, as discussed above, the Sonos Forums reference, as a whole, does not qualify as prior art under §102 (a), (b), or (f). *Supra* Section XI.B.

422.   Second, Dr. Schonfeld is only relying on the Sonos Forums to make up for the deficiencies of Sonos's 2005 system with respect to limitation 1.6, but as explained above, Sonos's 2005 system did not meet several other limitations of claim 1, including limitations 1.7-1.10. Thus, even if one were to accept Dr. Schonfeld's opinions regarding the combination of Sonos's 2005 system with the Sonos Forums, claim 1 still would not be rendered obvious by that combination.

423.   Third, the Sonos Forums reference fails to disclose or suggest a "first zone player" that is programmed with the functional capability required by limitation 1.6 for various reasons. For instance, Dr. Schonfeld relies solely on the following two posts from the Sonos Forums for limitation 1.6:

Macro / presets

16 years ago · 61 replies · 15122 views

22 September 2005

J JeffT Trending Lyricist I · 20 replies

Just got the intro bundle, and I am impressed. I did a search and did not find this suggested, but I would save Zone links as favorites. With only 2 ZPs it is not a problem yet, but when I add more it maybe. I would like to setup say Morning mode for the units I want in the morning and a preset volume between the units. Another example I would have 2 party modes, Summer and Winter. The Summer mode would include the deck speakers and the Winter mode would not. Also it would be nice to have playlists or radio station associated with each mode. So when I get up I press Morning the DI Chill radio station plays.

Jeff

Virtual Zones and Zone Grouping

17 years ago · 190 replies · 45480 views

27 February 2005

T theboyg Avid Contributor I · 22 replies

This "link/unlink" business is really cumbersome - and not a joy to use which goes against the ease of use of the rest of the system.

Why can't I have a virtual zone - ie a zone called "Downstairs" - and I can group all my downstairs zones into this. Then I dont have to keep manually linking/unlinking multiple zones everytime.

PLEASE !

G.

Schonfeld Op. Report ¶ 230 (citing Farrar Dep. Exs. 6, 8). Dr. Schonfeld never goes on to explain how the foregoing posts from the Sonos Forums purportedly satisfy limitation 1.6, but regardless, I disagree that the foregoing posts disclose or suggest the claimed "zone scenes" functionality required by limitation 1.6 and the other surrounding language.

424.   As explained above, a claimed "zone scene" requires a group of "zone players" that (i) is "predefined" and "previously-saved" at a user's request in advance of the group being activated for synchronous playback as part of an initial "setup" phase during which the group members are "added" to the "zone scene" by a user using a "network device" (*i.e.*, a controller device) and (ii) initially exists in an inactive state such that the "zone players" added to the "zone scene" are "to be configured for synchronous [media] playback" at a future time when the group is invoked, but do not change their operating mode for audio playback at the time of creation and

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can thereafter be used for individual audio playback while the "predefined," "previously-saved" group remains in existence and is available to be "selected for invocation" in the future.   The foregoing posts' high-level discussion of a "mode" or a "virtual zone" fails to meet all of these requirements. For instance, the foregoing posts do not mention a group being "predefined" and "previously-saved" at a user's request *in advance of the group being activated for synchronous playback* as part of an initial "setup" phase, nor does it mention a group that *initially exists in an inactive state* such that the "zone players" added to the "zone scene" are "to be configured for synchronous [media] playback" at a future time when the group is invoked, but do not change their operating mode for audio playback at the time of creation.

425.   Further, the foregoing posts do not disclose or suggest the claimed capability of the "first zone player" to be added to multiple different "zone scenes" that are then both in existence and available to be "selected for invocation" at a later time.

426.   Further yet, the foregoing posts do not disclose or suggest any particular functionality for creating a "mode" or a "virtual zone," let alone the claimed functionality whereby a "zone player" is programmed with the capability to, "while operating in a standalone mode," (i) "receiv[e], from a network device over a data network, a first indication that the first zone player has been added to a first zone scene comprising a first predefined grouping of zone players including at least the first zone player and a second zone player that are to be configured for synchronous playback of media when the first zone scene is invoked," (ii) "receiv[e], from the network device over the data network, a second indication that the first zone player has been added to a second zone scene comprising a second predefined grouping of zone players including at least the first zone player and a third zone player that are to be configured for synchronous playback of media when the second zone scene is invoked, wherein the second zone player is different than the third zone player," and (iii) "after receiving the first and second indications, continu[e] to operate in the standalone mode until a given one of the first and second zone scenes has been selected for invocation."

427.   Still further, the foregoing posts do not disclose or suggest any particular functionality for invoking a "mode" or a "virtual zone," let alone the claimed functionality whereby

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a "zone player" is programmed with the capability to (i) "after the given one of the first and second zone scenes has been selected for invocation, receiving, from the network device over the data network, an instruction to operate in accordance with a given one of the first and second zone scenes respectively comprising a given one of the first and second predefined groupings of zone players" and (ii) "based on the instruction, transitioning from operating in the standalone mode to operating in accordance with the given one of the first and second predefined groupings of zone players such that the first zone player is configured to coordinate with at least one other zone player in the given one of the first and second predefined groupings of zone players over a data network in order to output media in synchrony with output of media by the at least one other zone player in the given one of the first and second predefined groupings of zone players."

428.   In this way, the foregoing posts appear to express nothing more than mere hope that Sonos would someday invent a "zone scene" functionality that had not been achieved before. *See, e.g.,* GOOG-SONOS-WDTX-INV-00015877 at 877 ("I would like to setup say Morning mode ...."); GOOG-SONOS-WDTX-INV-00015870 at 870 ("Why can't I have a virtual zone .... PLEASE!").

429.   Dr. Schonfeld also attempts to rely on Mr. Lambourne's testimony to conclude that "the users requesting 'virtual zones' and 'macro' or 'preset' groups disclosed the 'zone scene' concept." Schonfeld Op. Report at ¶ 231. However, Mr. Lambourne testified that his claimed "zone scene" functionality addressed the need of the foregoing users; not that the foregoing users disclosed the claimed "zone scene" functionality. Lambourne Dep. Tr. at 131:3-7 ("Did you invention address the concerns of these users through adding Zone Scenes? … THE WITNESS: Yes. My invention would describe the need described here."). In fact, as discussed above, Mr. Lambourne already memorialized his thoughts on his "zone scene" concept at least 4 months before the foregoing post by user "JeffT." *Supra* ¶¶ X-X.

430.   Because the Sonos Forums reference fails to disclose or suggest a "first zone player" that is programmed with the functional capability required by limitation 1.6, even if a POSITA in 2005-06 were to modify Sonos's 2005 system to incorporate the discussion in the identified user posts from Sonos Forums, it is my opinion that the ZonePlayers in such a modified Sonos system

1 still would not have the capability required by limitation 1.6 – let alone other capability that was

2 absent from the ZonePlayers in Sonos's 2005 system.

3   431.   Fourth, Dr. Schonfeld has failed to provide any explanation as to how Sonos's 2005

4 system would have actually been modified to combine it with the subject matter discussed in the

5 identified user posts from Sonos Forums – let alone how that alleged combination would have

6 achieved the claimed invention.

7   432.   Fifth, Dr. Schonfeld fails to provide any explanation or evidence as to how or why

8 these two user posts from the Sonos Forums would have motivated a POSITA in 2005-2006 to

9 modify Sonos's 2005 system in any way – let alone would have motivated a POSITA in 2005-

10 2006 to modify Sonos's 2005 system in the specific ways that would have been required in order

11 to achieve the claimed invention (which go well beyond what is discussed in the Sonos Forums

12 posts). *See* Schonfeld Op. Report at ¶ 230.

13   433.   I have also seen evidence of affirmative reasons why a POSITA would not have

14 been motivated to modify Sonos's 2005 system in view of the identified user posts from the Sonos

15 Forums.   For instance, as explained above, I have seen other user posts from the Sonos Forums

16 casting doubt as to how overlapping "zone scenes" would have worked in Sonos's system. For

17 example, even after the claimed conception date, a post from "Majik" on April 18, 2006 suggests

18 that there were concerns about potential "side-effects" if "zones [can] be allowed to be in more

19 than one group." GOOG-SONOS-WDTX-INV-00015870 at 871. I have also seen evidence from

20 other Sonos threads suggesting that, even in 2016, users thought overlapping "zone scenes" would

21 have been "logically impossible" to implement in Sonos's system. SONOS-SVG2-00226916 at

22 916. Given this skepticism, it is my opinion that a POSITA would have been dissuaded from

23 modifying Sonos's 2005 system in view of the identified user posts from the Sonos Forums.

24   434.   Finally, because there is no evidence that a POSITA in 2005-06 would have been

25 motivated to modify Sonos's 2005 system in view of the identified user posts from the Sonos

26 Forums, it appears that Dr. Schonfeld has used the asserted claims as a roadmap to reach his

27 conclusion that a POSITA would have found the claimed invention obvious based on Sonos's 2005

28 system in combination with the Sonos Forums, which I understand to be improper.

1 not established that those "physical Squeezeboxes" are prior art.[12]

2 <center>VM/Linux Test System</center>

3 560.   As part of his analysis, Dr. Schonfeld also relies on testing he performed using what

4 appears to be a single computer running five different virtual machines (VMs) – two VMs for two

5 respective instances of SlimServer version 5.3.1 and three VMs for three respective instances of

6 the Softsqueeze software player that was allegedly "bundled" with SlimServer version 5.3.1. *See,*

7 *e.g.,* Schonfeld Op. Report at ¶¶ 406-551; *see also id.* at ¶¶ 311-324. Dr. Schonfeld asserts that all

8 VMs "run the Fedora Core 4 Linux operating system." *Id.* at ¶ 322. I also understand that Java is

9 needed to run the Softsqueeze software players. *Id.* at ¶ 311. The names Dr. Schonfeld assigned

10 to the two SlimServers and three Softsqueeze software players, as well as their MAC and IP

11 addresses, are shown in the table below from Dr. Schonfeld's Opening Report:

Name	Network MAC	Player MAC	IP
slimserver1	00:0C:29:A3:52:C6		192.168.136.128
slimserver2	00:0C:29:3B:B5:D2		192.168.136.135
player1	00:0C:29:45:6F:C2	db:3a:52:e6:70:6b	192.168.136.129
player2	00:0C:29:83:57:01	19:1e:67:04:72:30	192.168.136.130
player3	00:0C:29:B2:5E:60	bc:2a:ae:6b:ab:ce	192.168.136.131

20 *See* Schonfeld Op. Report at ¶ 407.

21 561.   As an initial matter, I understand that Google did not make Dr. Schonfeld's same

22 Linux-based system available for inspection. Consequently, I was unable to reproduce, evaluate,

23 and/or verify Dr. Schonfeld's testing. For example, I was unable to evaluate what computer was

24 used to run the five VMs and whether the computer was prior art. As another example, I was

25 unable to evaluate what operating system was running on the computer and whether the operating

26

27 [12] Notably, one of the screenshots included in Dr. Schonfeld's Opening Report indicates that one of the players was running player firmware version 137. *See* Schonfeld Op. Report at ¶ 362. As explained

28 above, version 137 is not prior art.

<center>228</center>

1   system was prior art. As yet another example, I was unable to evaluate what VMs were used and

2   whether the VMs were prior art. As yet a further example, I was unable to evaluate how any of

3   the software running on the computer was configured or even what software was on the computer.

4   This missing information is necessary to evaluate whether Dr. Schonfeld's testing demonstrates

5   the functionality of a Squeezebox system that qualifies as prior art.

6   562.   Moreover, Dr. Schonfeld failed to establish that a system having the specific

7   configuration he relied on for his testing was ever implemented prior to any of the September 12,

8   2005 critical date, the December 21, 2005 invention date, or the September 12, 2006 priority date.

9   For example, Dr. Schonfeld failed to establish that a system having three instances of the same

10   Softsqueeze software player was ever implemented on the same computer. I find it highly

11   improbable that a user would want to listen to audio playing from three Softsqueeze software

12   players at the same time on the same computer. In fact, it is unlikely that a user would even want

13   or need three Softsqueeze software players on the same computer. As another example, Dr.

14   Schonfeld failed to establish that a system having two instances of the same SlimServer version

15   5.3.1 was ever implemented, let alone a system having two instances of the same SlimServer

16   version 5.3.1 on the same computer. This seems unlikely since a Softsqueeze software player can

17   only connect to one SlimServer instance at any given time, as shown in Dr. Schonfeld's testing

18   and as explained below.

19   563.   Further, as noted above, Dr. Schonfeld's "Squeezebox" invalidity theories are

20   based on physical Squeezebox players, not Softsqueeze software players. To account for this flaw

21   in his analysis, Dr. Schonfeld asserts that the Softsqueeze software players have "the same features

22   and functionality" as the physical Squeezebox players. *See* Schonfeld Op. Report at ¶ 358, n.4.

23   However, Dr. Schonfeld has not cited any evidence that this is true with respect to all the

24   functionality recited in claim 1 of the '885 Patent. Instead, Dr. Schonfeld attempts to support his

25   assertion by merely stating that while this Linux-based testing "uses VMs and Softsqueeze, … my

26   testing of the hardware Squeezebox confirms that the same setup is available through

27   Squeezeboxes …." *Id*. at ¶ 406. I disagree.

28   564.   First, Dr. Schonfeld did not test the same functionality using the physical

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programmed with the capability to be a member of two different groups that are both in existence at the same time such that they are both available to be "selected for invocation." In such a hypothetical scenario, the Squeezebox players could only be connected to one SlimServer instance at any given time – as confirmed by Dr. Schonfeld's own description – and once the Squeezebox players are disconnected from the first SlimServer instance, a POSITA would no longer consider the Squeezebox players to be members of any "sync group" that was created at the first SlimServer instance.   To the contrary, a POSITA would understand that when the Squeezebox players were hypothetically disconnected from the first SlimServer instance and connected to the second SlimSever instance, this would have formed an entirely different system in which the previously-created "sync group" does not exist and is certainly not available to be selected or used for audio playback.

606.   Third, Dr. Schonfeld fails to present any evidence that the hypothetical setup he describes where a user installed and used two different SlimServer instances to create two different "sync groups" including overlapping Squeezebox players was ever actually implemented – let alone implemented at a time that would qualify it as prior art to the '885 Patent.

607.   Fourth, Dr. Schonfeld's multiple SlimServer theory is also premised on a number of statements that are unclear, unsupported, and/or otherwise fail to provide support for Dr. Schonfeld's opinion that a Squeezebox player could be a member of two different "sync groups" that are both in existence at the same time. For example, Dr. Schonfeld says that "a player may be used with different invocations of the same server," but Dr. Schonfeld fails to explain or provide support for this statement, and it is not clear what this means or how it differs from Dr. Schonfeld's hypothetical scenario involving two different SlimServer instances. As another example, Dr. Schonfeld says that "SlimServer v6.2.1 supports a 'serv' SlimProto message from SlimServer to player that tells a player to switch servers," but Dr. Schonfeld fails to explain the significance or relevance of this alleged functionality to his opinion that a Squeezebox player could be a member of two different "sync groups" that are both in existence at the same time, nor does he explain how such alleged functionality would be incorporated into SlimServer v5.3.1 upon which he primarily relies. *See* Schonfeld Op. Report at ¶¶402-403. As yet another example, Dr. Schonfeld mentions

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the December 21, 2005 invention date and/or the September 12, 2006 priority date of the '885 Patent.

774. For the reasons above, Dr. Schonfeld has not proven that the actual Bose Lifestyle 50 System or the combination of the various Bose products he relies on qualifies as prior art.

2. The Bose Lifestyle 50 System did not have "Zone Scenes" Functionality

775. Claim 1 of the '885 Patent requires a "first zone player" that is programmed with the capability to be added to two different "zone scenes" and then later operate in accordance with a selected one of the two different "zone scenes."

776. As explained above, a "zone scene" requires a group of "zone players" that (i) is "predefined" and "previously-saved" at a user's request in advance of the group being activated for synchronous playback as part of an initial "setup" phase during which the group members are "added" to the "zone scene" by a user using a "network device" (*i.e.*, a controller device) and (ii) initially exists in an inactive state such that the "zone players" added to the "zone scene" are "to be configured for synchronous [media] playback" at a future time when the group is invoked, but do not change their operating mode for audio playback at the time of creation and can thereafter be used for individual audio playback while the "predefined," "previously-saved" group remains in existence and is available to be "selected for invocation" in the future. *Supra* Section IX.A.4.

777. Based on the evidence I have reviewed regarding the Bose Lifestyle 50 System, it is my opinion that neither the Acoustimass modules of the Bose Lifestyle 50 System nor the SA-2 and SA-3 amplifiers that appear to have been compatible with the Bose Lifestyle 50 System (each of which may be referred to herein as a "Lifestyle player") had the capability to be added to a "zone scene" – let alone the capability to be added to two different "zone scenes" and then later operate in accordance with a selected one of the two different "zone scenes," as required by claim 1 of the '885 Patent.[18]

778. As explained above, the evidence I reviewed indicates that the Personal music

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[18] It is also my opinion that the Jewel Cube speakers of the Bose Lifestyle 50 System did not have the capability to be added to a "zone scene" – let alone the capability to be added to two different "zone scenes" and then later operate in accordance with a selected one of the two different "zone scenes," as required by claim 1 of the '885 Patent. Dr. Schonfeld does not appear to dispute this.

center of the Bose Lifestyle 50 System enabled a user to set up a "shared source" of audio that could be distributed via audio cables from the centralized multi-room interface to Lifestyle players in up to four rooms (rooms A, B, C, and D) so that the same audio could be played back simultaneously via the Lifestyle players and their connected speakers (e.g., the Jewel Cube speakers of the Bose Lifestyle 50 System). BOSE_SUB-0000001-55 at 44-45. Based on the Bose Lifestyle 50 System evidence I reviewed, setting up a "shared source" was the only way to create any sort of "group" of Lifestyle players that were capable of playing back the same audio simultaneously. As an example, to set up a "shared source" in two rooms A and B, a user could (1) use the ROOM button on the Personal music center to select room A and then use a source button to set an audio source for room A; and (2) use the ROOM button on the Personal music center to select room B and then use the same source button to set the same audio source for room B. Thereafter, the user could use the ROOM button again to select both rooms A and B together such that both rooms could be controlled together:

Setting up a shared source

Now, let's say the system is already on and you want to play the FM radio in rooms A and B:

1. Wake up the Personal music center.
2. Press the ROOM button until the room indicator Ⓐ is displayed. Press the FM source button and adjust the volume to the desired level for room A.
3. Press the ROOM button again to select room Ⓑ. Press the FM source button and adjust the volume to the desired level for room B. Now, the indicators A Ⓑ are displayed.
4. Press the ROOM button again. The indicators Ⓐ Ⓑ appear on the display indicating that you can control these two rooms together. Any button command given now (SOURCE, VOLUME, MUTE, ON/OFF, SLEEP) is applied to both rooms.

BOSE_SUB-0000001-55 at 44.

779.   Alternatively, a user could set up a "shared source" for all the available rooms A-D by pressing the HOUSE button on the Personal music center followed by pressing a source button to select the audio source that the user wanted to listen to in all rooms:

Interrogatory Nos. 4 and 13, (which I hereby incorporate by reference), as well as my review of the evidence, it is my opinion that there exists ample evidence of secondary considerations that suggests that claim 1 of the '885 Patent would not have been obvious to a POSITA at the time of their invention.

967.   In this regard, as I explain in this report, it is my opinion that Dr. Schonfeld has not articulated persuasive theories as to why the various references he relies on purportedly would have been obvious to combine to derive the invention of claim 1 of the '885 Patent. On the other hand, the evidence of secondary considerations of non-obviousness that I have seen overwhelmingly indicates to me that claim 1 of the '885 Patent would not have been obvious to a POSITA at the time of invention.

A.   Requisite Nexus

968.   As an initial matter, I understand that, in order for any secondary consideration of non-obviousness evidence to be given substantial weight, the evidence of the secondary consideration must have a "nexus" to the claim at issue, which means there must be a sufficient connection between the evidence and the patented invention.

969.   As I provided in my Opening Expert Report, after evaluating Sonos's commercial products and the '885 Patent, it is my opinion that as of June 2020 the Sonos One, One SL, Play:1, Play:3, Play:5, Five, Move, Roam, Beam, Playbar, Playbase, Arc, Connect, Port, Connect:Amp, Amp, SYMFONISK table lamp WiFi speaker, and SYMFONISK bookshelf WiFi speaker each practice at least claim 1 of the '885 Patent. This opinion is based on my review of Sonos's First Supplemental Response to Google's Interrogatory No. 13 and the materials identified therein, as well as my own use of Sonos's commercial products. In addition, this opinion is based on my review of Sonos's Technology Tutorial, which I understand was submitted to the court in February 2022. Further, this opinion is also based on my review of the '885 patent to product information available on Sonos's website. See SONOS-SVG2-00224833-838.

970.   For completeness, I have reproduced below the relevant portion of Sonos's First Supplemental Response to Google's Interrogatory No. 13.

1 | my opening report.

2 | 1086. I have also reviewed Sonos's Technology Tutorial that provides an overview of the

3 | '885 Patent, which I understand was submitted to the court in February 2022. I incorporate by

4 | reference herein Sonos's Technology Tutorial and expressly reserve the right to use the

5 | Technology Tutorial in whole or in part as a demonstrative to assist in my testimony.

6 | **XVIII.** **RESERVATION OF RIGHT**

7 | 1087. I reserve the right to further expound on my opinions regarding the validity of claim

8 | 1 of the '885 Patent in subsequent declarations, reports, and/or at trial.

Dated: July 27, 2022   By: _____

                       Kevin C. Almeroth